

WHAT IS CLAIMED IS:

~~1. A printer that prints images on a recording medium fed through the printer, comprising:~~

a line feeding motor that actuates in predetermined stepped increments;

a line feeding device driven by the line feeding motor for feeding the recording medium through the printer;

a print head for printing a image on the recording medium by scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution that is less than a pixel resolution printed by the printer, j being an integer number; and

a controller for controlling the line feeding motor to actuate in stepped increments and for controlling a number of the j nozzles utilized in printing the image,

wherein, for each stepped increment of the line feed motor, the line feeding device feeds the recording medium ($m \times 1/n$) pixels of the print head pixel resolution, where m and n are integer numbers and m is greater than n , and

wherein, the controller controls the j nozzles that print in any one scan of the print head based on the number of increments of the line feed motor.

2. A printer according to Claim 1, wherein
m equals 3 and n equals 2.

3. A printer according to Claim 2, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in the pixel resolution printed by the printer.

4. A printer according to Claim 2, wherein j equals 304 and the controller controls the 304 nozzles so that 300 or less nozzles print in any one scan of the print head.

5. A printer according to Claim 2, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

6. A printer according to Claim 1, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

7. A printer according to Claim 1, wherein the printed resolution is a maximum printable resolution of the printer.

~~8. A method of feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:~~

~~actuating a line feeding motor in predetermined stepped increments;~~

~~feeding the recording medium through the printer by a line feeding device driven by the line feeding motor;~~

~~printing a image on the recording medium by a print head scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution~~

that is less than a pixel resolution printed by the printer, j being an integer number;

controlling the actuating step to actuate the line feed motor in stepped increments; and

controlling a number of the j nozzles utilized in printing the image,

wherein, for each stepped increment of the line feed motor, the line feeding device feeds the recording medium $(m \times 1/n)$ pixels of the print head pixel resolution, where m and n are integer numbers and m is greater than n , and

wherein, the j nozzles that print in any one scan of the print head are controlled based on the number of increments of the line feed motor.

9. A method according to Claim 8, wherein m equals 3 and n equals 2.

10. A method according to Claim 9, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in the pixel resolution printed by the printer.

11. A method according to Claim 9, wherein j equals 304 and the controller controls the 304 nozzles so that 300 or less nozzles print in any one scan of the print head.

12. A method according to Claim 9, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

13. A method according to Claim 8, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

14. A method according to Claim 8, wherein the printed resolution is a maximum printable resolution of the printer.

15. Computer executable process steps for feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:

actuating a line feeding motor in predetermined stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor;

printing a image on the recording medium by a print head scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution that is less than a pixel resolution printed by the printer, j being an integer number;

controlling the actuating step to actuate the line feed motor in stepped increments; and

controlling a number of the j nozzles utilized in printing the image,

wherein, for each stepped increment of the line feed motor, the line feeding device feeds the recording medium ($m \times 1/n$) pixels of the print head pixel resolution, where m and n are integer numbers and m is greater than n, and

wherein, the j nozzles that print in any one scan of the print head are controlled based on the number of increments of the line feed motor.

16. Computer executable process steps according to Claim 15, wherein m equals 3 and n equals 2.

17. Computer executable process steps according to Claim 16, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in a printed pixel resolution.

18. Computer executable process steps according to Claim 16, wherein j equals 304 and the controller controls the 304 nozzles so that 300 or less nozzles print in any one scan of the print head.

19. Computer executable process steps according to Claim 16, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

20. Computer executable process steps according to Claim 15, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

21. Computer-executable process steps according to Claim 15, wherein the printed pixel resolution is a maximum printable resolution of the printer.

22. A computer-readable medium in which is stored computer executable process steps for feeding a recording medium through a printer for printing

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images on the recording medium, the computer-executable process steps comprising:

actuating a line feeding motor in predetermined stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor;

printing a image on the recording medium by a print head scanning across the recording medium and ejecting ink from nozzles, the print head having j nozzles spaced at a predetermined pixel resolution that is less than a pixel resolution printed by the printer, j being an integer number;

controlling the actuating step to actuate the line feed motor in stepped increments; and

controlling a number of the j nozzles utilized in printing the image,

wherein, for each stepped increment of the line feed motor, the line feeding device feeds the recording medium $(m \times 1/n)$ pixels of the print head pixel resolution, where m and n are integer numbers and m is greater than n , and

wherein, the j nozzles that print in any one scan of the print head are controlled based on the number of increments of the line feed motor.

23. A computer-readable medium according to Claim 22, wherein m equals 3 and n equals 2.

24. A computer-readable medium according to Claim 23, wherein the increment of the line feed motor corresponds to a line feed of 3 pixels in a printed pixel resolution.

25. A computer-readable medium according to Claim 23, wherein j equals 304 and the controller controls the 304 nozzles so that 300 or less nozzles print in any one scan of the print head.

26. A computer-readable medium according to Claim 23, wherein j equals 80 and the controller controls the 80 nozzles so that 78 or less nozzles print in any one scan of the print head.

27. A computer-readable medium according to Claim 22, wherein the j nozzles are spaced at a 600 dpi resolution and the printed resolution of the printer is 1200 dpi.

28. A computer-readable medium according to Claim 22, wherein the printed pixel resolution is a maximum printable resolution of the printer.

29. A print driver for processing image data to be sent to a printer that prints the image data, the print driver comprising:

performing rasterization, color conversion and halftone processing on the image data;

storing the processed image data in a print buffer for transmission to the printer;

calculating a line skip amount;

calculating a buffer offset amount; and

adjusting a starting position for storing of the image data in the print buffer based on a result of the calculated buffer offset amount,

wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

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30. A print driver according to Claim 29, wherein the printer has a line feed ratio of $m \times 1/n$, where m and n are integer numbers greater than 1, m is greater than n , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

31. An image processing method for processing image data to be sent to a printer, comprising the steps of:

performing rasterization, color conversion and halftone processing on the image data;

storing the processed image data in a print buffer for transmission to the printer;

calculating a line skip amount;

calculating a buffer offset amount; and

adjusting a starting position for storing of the image data in the print buffer based on a result of the calculated buffer offset amount,

wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

32. A method according to Claim 31, wherein the printer has a line feed ratio of $m \times 1/n$, where m and n are integer numbers greater than 1, m is greater than n , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

33. Computer-executable process steps for processing image data to be sent to a printer, comprising the steps of:

performing rasterization, color conversion and halftone processing on the image data;

storing the processed image data in a print buffer for transmission to the printer;

calculating a line skip amount;

calculating a buffer offset amount; and

adjusting a starting position for storing of the image data in the print buffer based on a result of the calculated buffer offset amount,

wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

34. Computer-executable process steps according to Claim 33, wherein the printer has a line feed ratio of $m \times 1/n$, where m and n are integer numbers greater than 1, m is greater than n , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

35. A computer-readable medium which stores executable process steps for processing image data to be sent to a printer, the executable process steps comprising:

performing rasterization, color conversion and halftone processing on the image data;

storing the processed image data in a print buffer for transmission to the printer;

calculating a line skip amount;

calculating a buffer offset amount; and

adjusting a starting position for storing of the image data in the print buffer based on a result of the calculated buffer offset amount,

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wherein, the line skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

36. A computer-readable medium according to Claim 35, wherein the printer has a line feed ratio of $m \times 1/n$, where m and n are integer numbers greater than 1, m is greater than n , and the line skip amount and the buffer offset amount are calculated based on the line feed ratio.

37. A print driver for processing image data to be sent to a printer that prints image data on a recording medium at a print pixel resolution greater than a resolution of a print head and feeds the recording medium in units of a feed amount corresponding to $(m \times 1/n)$ pixels of the print head resolution, where m and n are integer numbers and m is greater than n , the print driver comprising:

generating a line of image data;
determining whether at least a number of contiguous lines of image data do not include a pixel to be printed, the number of contiguous lines corresponding to the feed amount unit; and
sending line skip amount information to the printer based on a result of the determining step.

38. A print driver according to Claim 37, wherein the determining step comprises:

storing the line of image data in a print buffer for transmission to the printer; and
calculating the line skip amount.

39. A print driver according to Claim 38, wherein the determining step further comprises:

calculating a buffer offset amount; and
adjusting a starting position for storing
the image data in the print buffer based on a result
of the calculated buffer offset amount,

wherein, the skip amount and the buffer
offset amount are calculated in a case where a first
line of image data to be stored in the print buffer
is white data.

40. Computer-executable process steps for
processing image data to be sent to a printer that
prints image data on a recording medium at a print
pixel resolution greater than a resolution of a
print head and feeds the recording medium in units
of a feed amount corresponding to $(m \times 1/n)$ pixels
of the print head resolution, where m and n are
integer numbers and m is greater than n, the process
steps comprising:

generating a line of image data;
determining whether at least a number of
contiguous lines of image data do not include a
pixel to be printed, the number of contiguous lines
corresponding to the feed amount unit; and
sending line skip amount information to the
printer based on a result of the determining step.

41. Computer-executable process steps
according to Claim 40, wherein the determining step
comprises:

storing the line of image data in a print
buffer for transmission to the printer; and
calculating the line skip amount.

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42. Computer-executable process steps according to Claim 41, wherein the determining step further comprises:

calculating a buffer offset amount; and
adjusting a starting position for storing the image data in the print buffer based on a result of the calculated buffer offset amount,

wherein, the skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

43. A computer-readable medium on which are stored computer-executable process steps for processing image data to be sent to a printer that prints image data on a recording medium at a print pixel resolution greater than a resolution of a print head and feeds the recording medium in units of a feed amount corresponding to $(m \times 1/n)$ pixels of the print head resolution, where m and n are integer numbers and m is greater than n, the process steps comprising:

generating a line of image data;
determining whether at least a number of contiguous lines of image data do not include a pixel to be printed, the number of contiguous lines corresponding to the feed amount unit; and
sending line skip amount information to the printer based on a result of the determining step.

44. A computer-readable medium according to Claim 43, wherein the determining step comprises:

storing the line of image data in a print buffer for transmission to the printer; and
calculating the line skip amount.

45. A computer-readable medium according to Claim 44, wherein the determining step further comprises:

calculating a buffer offset amount; and
adjusting a starting position for storing the image data in the print buffer based on a result of the calculated buffer offset amount,

wherein, the skip amount and the buffer offset amount are calculated in a case where a first line of image data to be stored in the print buffer is white data.

46. A printer that prints images on a recording medium fed through the printer, comprising:

a line feeding motor that actuates in stepped increments;

a line feeding device driven by the line feeding motor for feeding the recording medium through the printer; and

a print head mounted for banded printing across the recording medium, the print head having nozzles spaced for printing at a first print resolution,

wherein, one increment of the line feed motor results in a feed amount of m/n times the print head nozzle spacing, where m/n is greater than 1, and m and n are integer values where m is greater than n , and

wherein, to print the image, the recording medium line feed motor is actuated n increments, or an integer multiple of n increments between bands.

47. A printer according to Claim 46, wherein m equals 3 and n equals 2.

48. A printer according to Claim 46, wherein less than all of the nozzles of the print head are utilized in printing the image in any one band and a number of the nozzles utilized is related to m/n.

49. A printer according to Claim 48, wherein the print head comprises 304 nozzles and 300 or less nozzles are utilized in printing any one band.

50. A printer according to Claim 48, wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

51. A printer according to Claim 46, wherein the first resolution corresponding to the nozzle spacing is 600 dpi.

52. A printer according to Claim 46, wherein the first resolution corresponding to the nozzle spacing is 600 dpi, m equals 3 and n equals 2.

53. A method of feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:

actuating a line feeding motor in stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor; and

performing banded printing of an image on the recording medium by a print head scanning across

the recording medium, the print head having nozzles spaced at a first resolution,

wherein, one increment of the line feeding motor results in a feed amount of m/n times the print head nozzle spacing, where m/n is greater than 1, and m and n are integer values where m is greater than n , and

wherein, to print the image, the line feeding motor is actuated n increments, or an integer multiple of n increments between bands.

54. A method according to Claim 53,
wherein m equals 3 and n equals 2.

55. A method according to Claim 53,
wherein less than all of the nozzles of the print head are utilized in printing the image in any one band and a number of the nozzles utilized is related to m/n .

56. A method according to Claim 55,
wherein the print head comprises 304 nozzles and 300 or less nozzles are utilized in printing any one band.

57. A method according to Claim 55,
wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

58. A method according to Claim 53,
wherein the first resolution corresponding to the nozzle spacing is 600 dpi.

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59. A method according to Claim 53, wherein the first resolution corresponding to the nozzle spacing is 600 dpi, m equals 3 and n equals 2.

~~60. Computer-executable process steps for feeding a recording medium through a printer for printing images on the recording medium, comprising the steps of:~~

actuating a line feeding motor in stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor; and

performing banded printing of an image on the recording medium by a print head scanning across the recording medium, the print head having nozzles spaced at a first resolution,

wherein, one increment of the line feeding motor results in a feed amount of m/n times the print head nozzle spacing, where m/n is greater than 1, and m and n are integer values where m is greater than n, and

wherein, to print the image, the line feeding motor is actuated n increments, or an integer multiple of n increments between bands.

61. Computer-executable process steps according to Claim 60, wherein m equals 3 and n equals 2.

62. Computer-executable process steps according to Claim 60, wherein less than all of the nozzles of the print head are utilized in printing

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the image in any one band and a number of the nozzles utilized is related to m/n.

63. Computer-executable process steps according to Claim 62, wherein the print head comprises 304 nozzles and 300 or less nozzles are utilized in printing any one band.

64. Computer-executable process steps according to Claim 62, wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

65. Computer-executable process steps according to Claim 60, wherein the first resolution corresponding to the nozzle spacing is 600 dpi.

66. Computer-executable process steps according to Claim 60, wherein the first resolution corresponding to the nozzle spacing is 600 dpi, m equals 3 and n equals 2.

67. A computer-readable medium on which is stored computer-executable process steps for feeding a recording medium through a printer for printing images on the recording medium, the computer-executable process steps comprising:

actuating a line feeding motor in stepped increments;

feeding the recording medium through the printer by a line feeding device driven by the line feeding motor; and

performing banded printing of an image on the recording medium by a print head scanning across

DOCKET NUMBER 60

the recording medium, the print head having nozzles spaced at a first resolution,

wherein, one increment of the line feeding motor results in a feed amount of m/n times the print head nozzle spacing, where m/n is greater than 1, and m and n are integer values where m is greater than n , and

wherein, to print the image, the line feeding motor is actuated n increments, or an integer multiple of n increments between bands.

68. A computer-readable medium according to Claim 67, wherein m equals 3 and n equals 2.

69. A computer-readable medium according to Claim 67, wherein less than all of the nozzles of the print head are utilized in printing the image in any one band and a number of the nozzles utilized is related to m/n .

70. A computer-readable medium according to Claim 69, wherein the print head comprises 304 nozzles and 300 or less nozzles are utilized in printing any one band.

71. A computer-readable medium according to Claim 69, wherein the print head comprises 80 nozzles and 78 or less nozzles are utilized in printing any one band.

72. A computer-readable medium according to Claim 67, wherein the first resolution corresponding to the nozzle spacing is 600 dpi.

73. A computer-readable medium according to Claim 67, wherein the first resolution corresponding to the nozzle spacing is 600 dpi, m equals 3 and n equals 2.